



Amy G. Rabinowitz  
*Counsel*

November 5, 2004

Mary L. Cottrell, Secretary  
Department of Telecommunications and Energy  
One South Station  
Boston, MA 02110

**Re: D.T.E. 04-46**

Dear Secretary Cottrell:

In compliance with the Department's June 10, 2004 order in the above-captioned docket, I am enclosing a report of results of the 2004 Load Relief Program.

Thank you very much for your time and attention to this matter.

Very truly yours,

  
Amy G. Rabinowitz

cc: Joseph Rogers, Attorney General's Office  
Robert Sydney, General Counsel, Division of Energy Resources

25 Research Drive  
Westborough, MA 01582-0099  
508.389.2975 Fax: 508.389.2463  
amy.rabinowitz@us.ngrid.com

# **Massachusetts Electric Company**

## **2004 Load Relief Program**

### **Report of Results**

#### **I. Introduction**

During the summer of 2004, Massachusetts Electric Company ("Mass. Electric") implemented a local area load curtailment program in accordance with the 2004 Summer Load Relief Program Provision, M.D.T.E. No. 1072 for the Gloucester, North Lowell, and Dracut areas. This report provides information about the 2004 Summer Load Relief Program, as required by the Department of Telecommunications and Energy (the "Department") in its June 10, 2004 letter order in D.T.E. 04-46 approving the program. This report sets forth the number of participating customers and the potential kW reduction represented by those customers; the number of load curtailments called; the number of customers who curtailed load when requested and the kW reduction achieved; and five years actual summer peak load demand and summer peak load demand forecast for the three sites in the 2004 program, the summer normal rating and summer emergency ratings of the equipment in each of the three program sites, and the major contributing factors to the peak load conditions during each curtailment day.

In brief, during the summer of 2004, Mass. Electric called two load curtailment events in Dracut. The first event was called on Tuesday August 3, 2004 and the second was called on August 30, 2004. Mass. Electric called no events for either the Gloucester area or North Lowell area. Mass. Electric completed the Gloucester cable project as scheduled before the peak summer season, and thus, Mass. Electric did not need the load relief. The North Lowell area loading did not warrant calling any events in 2004.

#### **II. 2004 Summer Load Relief Program**

Mass. Electric's 2004 Summer Load Relief Program focused on three areas in its Bay State North division. They were: the Dracut area, served by the E. Dracut and N. Dracut substations, the Gloucester area, including Rockport, and the North Lowell area, served by the Boulevard and Hoover St. substations. This section of the report provides data on these three areas.

##### **A. Dracut Area**

In the Dracut area six customers enrolled in the program. The potential estimated load reduction for these customers based on load shed audits was 1,291 kW. The following is a summary of the Dracut area events in summer 2004:

##### **August 3, 2004 Event**

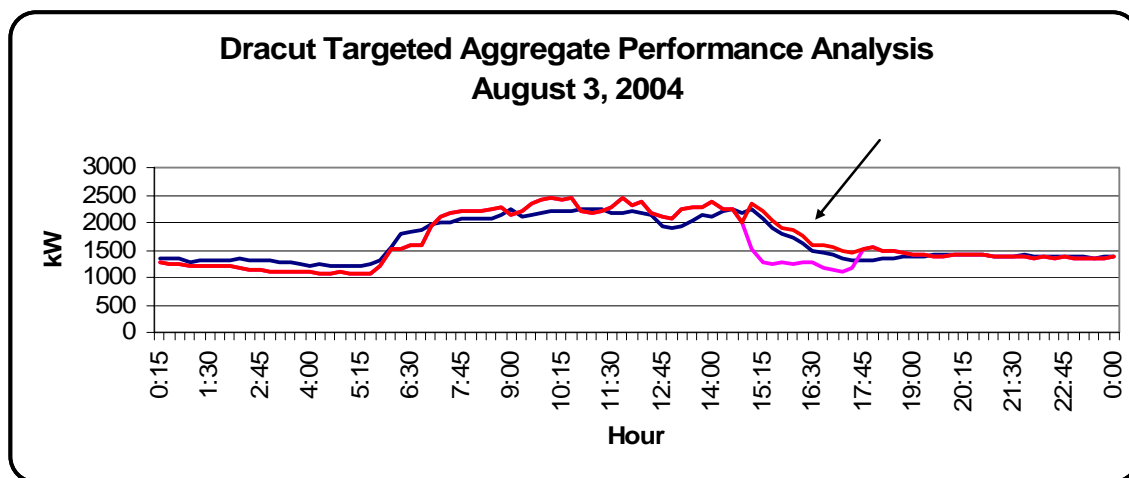
- The event was called from 2:45 p.m. to 5 p.m. based on data showing the N. Dracut transformer was reaching its summer normal rating limit due to hot and humid weather that afternoon.
- Based on the metered data and post-event calls, the Company learned that three customers participated in the event.

- For the three performing customers, the total average load reduction across all customers during the interruption period was 793 kW. This resulted in a total payment of \$1,082 to participating customers (see table below).

| Customer   | Average kW Reduced | Payment |
|------------|--------------------|---------|
| Customer 1 | 293                | \$403   |
| Customer 2 | 26                 | \$28    |
| Customer 3 | 474                | \$651   |
| Total      | 793                | \$1,082 |

The chart below shows the aggregate load reduction for the three customers that participated in the event. Please note that the calculated aggregate load reduction is different than the sum of the individual customers' load reduction. This results from the difference between the coincidental load reduction as a group versus non-coincidental load reduction when measuring individual performance (i.e. customers reduce loads at different times).

- The aggregate average reduction was 547 kW.
- The performance measurement is equal to the "projected" less the "actual" day load shape during the event.



|                 |  |
|-----------------|--|
| Average Weekday |  |
| Actual Day      |  |
| Projected Day   |  |

#### August 30, 2004 Event

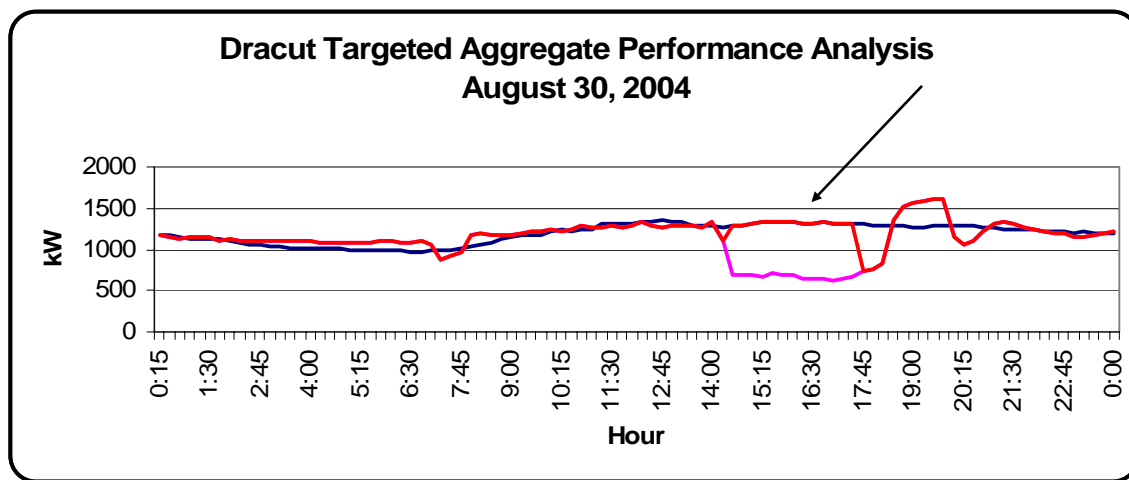
- The event was called from 2:15 p.m. to 5:30 pm based on data showing the N. Dracut transformer was reaching its summer normal rating limit due to hot and humid weather that afternoon.
- Based on metered data and post-event calls, the Company learned that three customers participated in the event. The customers that did participate were the same ones as those who participated in the August 3<sup>rd</sup> event.

- For the three performing customers, the total average load reduction across all customers during the interruption period was 941 kW. This resulted in a total payment of \$1,448 to participating customers (see table below).

| Customer    | Average kW Reduced | Payment |
|-------------|--------------------|---------|
| Customer 1* | 293                | \$403   |
| Customer 2  | 19                 | \$24    |
| Customer 3* | 629                | \$1,021 |
| Total       | 941                | \$1,448 |

\*The data for Customer 1 was not available but estimated to be 293 kW.

The chart below shows the aggregate load reduction for the customers that participated in the event, 649 kW.



|                 |  |
|-----------------|--|
| Average Weekday |  |
| Actual Day      |  |
| Projected Day   |  |

## B. Gloucester Area

Mass. Electric did not need to call any load shed events in this area. The new 51T1 and 2363 cables were energized in late June of 2004. There were seventeen customers enrolled for the Gloucester area from work done for the summer of 2003. The range of estimated potential load reduction for the customers in this area was 1,050 kW to 2,000 kW.

## C. North Lowell Area

Although a number of customers were approached in the North Lowell area, none enrolled in the program. This area was to be used to determine how much load shed could be enrolled, and then to attempt to use this load shed in future capacity improvement plans for the area. Further investigation of the overall loading in the area, and other customer interest in enrolling will determine whether and how to move forward with a targeted project for the summer of 2005.

#### **D. Peak Demand Data and Loading Ratings**

Historical and projected loadings for all areas are in Appendix 1.

### **III. Conclusion**

Despite the relatively cool summer and very few calls for load shed, Mass. Electric is encouraged with the process of implementing programs such as the 2004 Load Relief Program.. For 2004, the Company expanded the use of load shed audits to assist customers in managing their load during either Company-called events or in the event the Independent System Operator of New England ("ISO-NE") called an event. Offering a load shed audit was first introduced in 2003 after it became clear customers needed a step-by-step plan to manage their load. The Company has been continually improving the audit process and intends to introduce the concept to more customers during 2005. By providing these audits, the Company believes customers will be better equipped to respond to any load shed request. These audits provide customers guidance as to how to continue to participate in demand response programs offered by the ISO-NE even after the Company's needs in an area have been addressed with new distribution infrastructure. This is the case in the Gloucester area.

However, even with the load shed plan provided to the customers, other business reasons precluded some from participating. Either the individuals familiar with the process were not available to implement the plan, or the potential payment for shedding load was not enough at certain times in their process for them to shed load. Another factor was likely the urgency for load shed was not felt due to another mild summer this year. The Company believes in the event of a significant heat wave, general awareness for the need for load shed or demand response should increase the level of customer participation due to media and public appeals to conserve on electricity typically experienced with extreme heat and excessive demand for electricity.

## Appendix 1

Five Years of Historical and Projected Loading of Locations in MVA

| Location   | Transformer or Circuit | SN rating | SE rating | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------------|------------------------|-----------|-----------|------|------|------|------|------|------|------|------|------|------|------|
|            |                        |           |           |      |      |      |      |      |      |      |      |      |      |      |
| Dracut     | E Dracut T1            | 23.2      | 24.9      | 24.1 | 21.0 | 25.3 | 22.9 | 21.1 | 21.5 | 22.0 | 22.2 | 22.5 | 22.9 | 23.2 |
|            | N Dracut T1            | 25.6      | 27.5      | 19.2 | 19.2 | 21.0 | 17.9 | 24.8 | 25.3 | 25.8 | 26.1 | 26.6 | 26.9 | 27.4 |
|            |                        |           |           |      |      |      |      |      |      |      |      |      |      |      |
| N Lowell   | Hoover L1              | 8.8       | 10.0      | 5.5  | 4.9  | 6.5  | 6.7  | 6.5  | 6.6  | 6.7  | 6.8  | 6.9  | 7.0  | 7.1  |
|            | Hoover L2              | 8.8       | 10.0      | 4.3  | 4.8  | 5.6  | 4.5  | 8.6  | 8.8  | 8.9  | 9.0  | 9.2  | 9.3  | 9.4  |
|            | Boulevard T1           | 15.7      | 16.9      | 14.7 | 14.9 | 17.1 | 16.8 | 16.9 | 17.2 | 17.5 | 17.7 | 18.0 | 18.3 | 18.5 |
|            | Boulevard T2           | 15.7      | 16.9      | 14.7 | 14.9 | 17.1 | 16.8 | 16.9 | 17.2 | 17.5 | 17.7 | 18.0 | 18.3 | 18.5 |
|            |                        |           |           |      |      |      |      |      |      |      |      |      |      |      |
| Gloucester | 51T1                   | 29.0      | 35.6      | 21.1 | 21.1 | 17.5 | 21.1 | 21.6 | 21.6 | 22.0 | 22.2 | 22.3 | 22.5 | 22.7 |
|            | 51T2                   | 29.0      | 30.8      | 7.4  | 10.7 | 17.5 | 18.5 | 25.0 | 25.1 | 25.6 | 25.8 | 26.0 | 26.1 | 26.3 |
|            | 2363                   | 23.3      | 30.3      | 23.9 | 27.1 | 26.9 | 12.2 | 15.2 | 14.8 | 15.1 | 15.2 | 15.3 | 15.4 | 15.5 |
|            | 2324                   | 11.5      | 14.4      | 9.6  | 11.1 | 12.0 | 7.1  | 10.3 | 10.7 | 10.9 | 11.0 | 11.1 | 11.1 | 11.2 |
|            | 2325                   | 13.7      | 15.3      | 8.3  | 12.3 | 9.1  | 10.1 | 11.0 | 11.6 | 11.8 | 11.9 | 12.0 | 12.1 | 12.2 |